

Name :

Date:

The Important Life of Bees

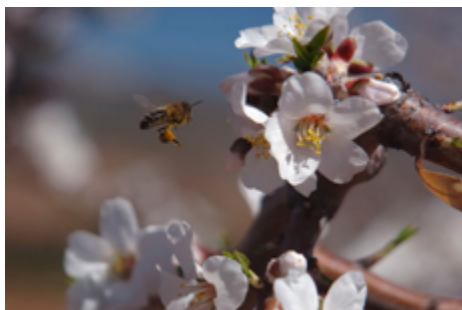
What I know about Bees	What I want to Know
1.	2.
3.	4.
5.	6.

Define these terms

7. Pollinators:
8. Nectar:
9. Pollen:
10. Yield:
11. Monoculture:
12. Herbicide:
13. Legume:

Read this passage and answer the questions

Pollination



Among all **pollinators** (hummingbirds, bats, butterflies, flies and some beetle), bees are unique. In addition to sipping **nectar** to fuel their own flight, they are one of the few animals to actively gather large amounts of **pollen** (and hence inadvertently scatter some of it widely between flowers). Rich in protein, the pollen of many plant species serves as the principle food source for developing bee larvae.

What do bees use nectar for?

What do bees use pollen for?

More than one-third of the world's crop species such as alfalfa seed, sunflower, and numerous fruits and vegetables depend on bee pollination, an ecological service valued in North America at \$20 billion a year. In North America the trends in honey bee numbers are decidedly downward, with the number of managed hives decreasing by 50% since the 1950s and the amount of crop acreage requiring bee pollination at an all time high. The cereal grains that make up the largest part of our diets, such as corn, rice and wheat, are wind pollinated. Thus the prospect of human starvation in the absence of bees is remote, but crop declines in the most nutritious—and arguably, most interesting—parts of our diet like fruit, vegetables, and alfalfa for meat and dairy production, are possible.



What fraction of the world's crop species depend on bee pollination?

Why are cereal grains not in any danger if bees are no longer around?

Honey Production



The Upper Midwest is the highest honey-producing region in the nation. **Yields** of honey per colony are highest in North Dakota, South Dakota, Minnesota and Montana. Most of the honey in this region comes from nectar of clover and alfalfa flowers. Minnesota prides itself on delicious and unique honey produced from native Basswood (*Tilia americana*) trees.

Sadly, honey yields even in the Upper Midwest are declining due to the replacement of flowering plants with large **monocultures** of corn and soybeans. Also, the ubiquitous use of **herbicides** kills off flowering nectar plants along crop borders, ditches and roadsides.

Planting more nectar producing – bee friendly plants will help our bees stay healthy and help our beekeepers produce more honey! If you have a large tract of land or yard, consider sowing it in clover or alfalfa. These **legumes** will fix nitrogen, improving the health of your soil while providing nectar and pollen for bees. Or, plant native flowering plants, many of which are good nectar and pollen producers: <http://www.xerces.org/pollinator-conservation/>

What is the highest honey-producing region of the United States?

Why are honey yields in the Upper Midwest declining?

How can Minnesotans help our bees to make more honey?